

CLAIMS

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1. A method for delivering a pharmaceutical composition comprising a nucleic acid to a tissue site, comprising the steps of:
- providing a gene delivery device comprising a contact surface;
applying said pharmaceutical composition to said contact surface; and
contacting said contact surface to said tissue site.
2. The method according to claim 1, wherein said contacting is by moving said contact surface across said tissue site.
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3. The method according to claim 2, wherein said moving across is a back and forth motion or a circular motion.
4. The method according to claim 1, wherein said contact surface is selected from the group consisting of a plurality of bristles, a plurality of fibers, and a sponge.
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5. The method according to claim 1, wherein said nucleic acid is selected from the group consisting of DNA, RNA, anti-sense molecules, triple-helix-forming nucleic acids, aptamers, and ribozymes.
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6. The method according to claim 1, wherein said gene delivery device comprises a lumen with an opening in proximity to said contact surface, and wherein said applying comprises delivering said pharmaceutical composition through said opening to the contact surface.
7. The method according to claim 1 or 6, wherein said pharmaceutical composition further comprises a polymerizable agent, which polymerizes when said contact surface is contacted to said tissue site.
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8. The method according to claim 6, wherein said lumen comprises a first and second channel sharing a common wall, and said method further comprises delivering a

polymerizable compound through said first channel and a polymerizing agent through said second channel, and wherein said polymerizing agent is polymerized by said polymerizing agent at said tissue site.

9. The method according to claim 8, wherein said pharmaceutical composition is mixed with said polymerizable compound.

10. The method according to claim 1, wherein said tissue site is selected from the group consisting of: the outer or inner surface of a blood vessel; intact or wounded skin; intact or wounded connective or muscular tissue, mucosa or serosa; the outer or inner surface of an abdominal or thoracic or special sensory organ; the cortical or ventricular surface or parenchyma of the brain; the spinal cord or its surrounding tissue; meningeal, ependymal or choroidal tissue; a muscle, tendon, cartilage, joint, or bone.

11. A kit, comprising:

a gene delivery device comprising a contact surface for contacting a tissue; and
a pharmaceutical composition comprising a nucleic acid.

12. A kit, comprising:

a gene delivery device comprising a graspable surface for attachment to a contact surface;
at least one contact surface for attachment to said graspable surface; and
a pharmaceutical composition comprising a dye or other detectable moiety and a nucleic acid.

13. The kit according to claim 11 or 12, wherein said contact surface comprises bristles.

14. The kit according to claim 11 or 12, wherein said nucleic acids are selected from the group consisting of DNA, RNA, anti-sense molecules, triple-helix-forming nucleic acids, aptamers, and ribozymes.

15. The kit according to claim 11 or 12, further comprising a polymerizable compound and a polymerizing agent.

16. The kit according to claim 11 or 12, wherein said polymerizeable compound is fibrinogen and said polymerizing agent is thrombin.

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5 17. The kit according to claim 11 or 12, wherein said gene delivery device comprises a graspable surface having, a longitudinal axis and said contact surface is detachable from said graspable element.

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18. The kit according to claim 12, wherein said contact surface comprises a plurality of contact surfaces, each of which are differently angulated with respect to the longitudinal axis of the grasping element.

10 19. The kit according to claim 11 or 12, wherein said gene delivery device further comprises a housing defining a lumen and having an opening in proximity with said contact surface, said lumen for delivering said pharmaceutical composition to a tissue site being contacted by the contact surface.

15 20. The kit according to claim 19, further comprising a double-barreled syringe and conduit-tubing.

21. A device for delivering a pharmaceutical composition to a tissue, comprising:

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a housing having a first end and a second end and defining a lumen, said first end comprising an opening;

20 a contact surface in communication with said first end of said lumen and for contacting a tissue, wherein said contact surface comprises a plurality of bristles at least partially surrounding said opening

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22. The device of claim 21, wherein said contact surface is detachable from said housing.

25 23. The device of claim 21, wherein said contact surface is at a 0-180° angle with respect to the longitudinal axis of the housing.

24. The device of claim 21, wherein said lumen further comprises a first and second channel, said first and second channel sharing a common wall.

25. The device of claim 21, wherein said second end of said housing is connectable to a syringe or conduit-tubing.

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26. The device of claim 21, wherein said syringe and conduit tubing are double-barreled.

27. The device of claim 21, wherein said first end comprises a plurality of openings.

5 28. The method according to claim 6, wherein said gene delivery device comprises any of the devices of claims 21-27.

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29. A kit comprising the device of any of claims 21-27, and further comprising a pharmaceutical composition comprising a nucleic acid.

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